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|-----------------------|-----------------|---------------------------|---------------------|------------------|
| APPLICATION NO.       | FILING DATE     | FIRST NAMED INVENTOR      | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
| 10/531,577            | 04/18/2005      | Takashi Noro              | 123531              | 1888             |
| 25944                 | 7590            | 05/26/2009                | EXAMINER            |                  |
| OLIFF & BERRIDGE, PLC | P.O. BOX 320850 | ALEXANDRIA, VA 22320-4850 | JOLLEY, KIRSTEN     |                  |
| ART UNIT              | PAPER NUMBER    |                           |                     |                  |
|                       | 1792            |                           |                     |                  |
| MAIL DATE             | DELIVERY MODE   |                           |                     |                  |
| 05/26/2009            | PAPER           |                           |                     |                  |

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

|                              |                                      |                                    |
|------------------------------|--------------------------------------|------------------------------------|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/531,577 | <b>Applicant(s)</b><br>NORO ET AL. |
|                              | <b>Examiner</b><br>Kirsten C. Jolley | <b>Art Unit</b><br>1792            |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED. (35 U.S.C. § 133).

Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 30 January 2009.

2a) This action is FINAL.      2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 20-39 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) Claim(s) \_\_\_\_\_ is/are allowed.

6) Claim(s) 20-39 is/are rejected.

7) Claim(s) \_\_\_\_\_ is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All    b) Some \* c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

|  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date: _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/US/02)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date: _____   | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Response to Arguments*

1. Applicant's arguments filed January 30, 2009 have been fully considered but they are not persuasive. Applicant argues that Fukuta discloses a *vertically* situated columnar structural body while Gane discloses a *horizontally* situated steel roll. Applicant states that the horizontal axis in Gane is a requirement, not an option, because the coating composition 9 must be held by the flexible blade 5. Applicant argues that one of ordinary skill would not have had any reason to combine Gane's flexible blade 5 into Fukuta's device because Gane's flexible blade is required to work with a horizontally oriented steel roll so that the coating composition 9 does not fall off. This is not persuasive to the Examiner. The primary reference of Fukuta already teaches the use of a doctor blade positioned vertically. The secondary reference of Gane is cited merely for its teaching of improved results when using a flexible doctor blade surface as compared to a steel doctor blade when applying and smoothing a coating on a rotating cylindrical substrate, resulting in a smooth, level coating on the substrate (col. 3, line 52 to col. col. 4, line 14, and col. 2, lines 7-45). Whether the doctor blade is oriented vertically or horizontally, one would expect similar successful results because the orientation would not affect the function of the blade.

Applicant also argues that Gane and Fukuta do not disclose that "the coating material is supplied to and coated on the outer peripheral surface through the elastic body" as recited in claim 20. Applicant argues that the composition 9 is Gane is already in contact with the steel roll 2 before being smoothed by the flexible blade 5. First, the Examiner notes that the claim language requiring that the elastic body delivers the coating material to the pillar structure is

rejected as being new matter, as discussed below. Further, the instant specification on page 16 discloses that the coating material is first delivered to the pillar structure and is then smoothed by the doctor blade, similar to Gane. Specifically, the specification states “The coating material supplied through the piping 13 (see FIG.3) is supplied to the outer peripheral surface 1a of the rotating pillar structure 1 from the nozzle 12 and coated thereon, and *immediately thereafter* the coating surface of the coating material is smoothed between the outer peripheral surface 1a and the elastic body 10b of smoothing means 10 together with the supplying and coating means 12 (namely, the coating surface is smoothed by the elastic body 10b)” [emphasis added]. Secondly, it is noted that the primary reference of Fukuta discloses similar placement of its coater and doctor blade with respect to the substrate as that disclosed in the instant application, for example see Figure 4 of the instant invention and Figures 5b and 5c of Fukuta. Thus the combination of Fukuta et al. in view of Gane would result in a similar apparatus to that described in Applicant's own specification. Lastly, while Gane's apparatus does deliver coating material to the cylindrical substrate by means of pool/trough 10, flexible blade 5 none-the-less contributes in delivering the coating material to the substrate surface as illustrated in Figure 1.

***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 20-39 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not

described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. In claim 20, lines 17-19, the newly added limitation “the coating material is *delivered* by the elastic body from the supplying and coating mechanism to the outer peripheral surface of the pillar structure [emphasis added]” appears to be new matter. The specification discloses “The coating material supplied through the piping 13 (see FIG.3) is supplied to the outer peripheral surface 1a of the rotating pillar structure 1 from the nozzle 12 and coated thereon, and *immediately thereafter* the coating surface of the coating material is smoothed between the outer peripheral surface 1a and the elastic body 10b of smoothing means 10 together with the supplying and coating means 12 (namely, the coating surface is smoothed by the elastic body 10b)” (page 16). Further, the specification provides similar disclosures on page 27, lines 1-10, and page 31, lines 1-14. The Examiner was unable to locate disclosure that the coating material is delivered to the pillar structure by the elastic body as claimed.

#### *Claim Rejections - 35 USC § 103*

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 20-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukuta et al. (US 5,749,970) in view of Gane (US 4,728,539).

Fukuta et al. discloses an apparatus for coating the outer peripheral surface of a pillar structure comprising: a holder which holds the pillar structure in nearly vertical direction and rotates together with the held pillar structure on an axis of nearly vertical direction as a common rotating axis; a supplying and coating mechanism which supplies a coating material to the outer peripheral surface of the rotating pillar structure and coats the coating material on the outer peripheral surface; and a doctor blade smoothing means the one longer side end portion of which is disposed at a given position with respect to the outer peripheral surface and which smoothes the coating surface of the coating material supplied to and coated on the outer peripheral surface, whereby the coating material is supplied to and coated on the outer peripheral surface through the doctor blade, and the coating surface is smoothed between the outer peripheral surface and the doctor blade.

Fukuta et al. lacks a teaching of a smoother having a smoothing plate and a sheet-like elastic body provided at the longer side end portion of the smoothing plate on the side of the pillar structure. The prior art of Gane is cited for its teaching of a coating apparatus comprising a flexible/elastic blade secured to a retaining means. Gane teaches that the flexible blade of its invention achieves improved coating such as a much smoother flow of coating composition under the blade as compared to a prior art steel doctor blade, resulting in a smooth, level coating (col. 3, line 52 to col. 4, line 14, and col. 2, lines 7-45). It would have been obvious to one having ordinary skill in the art, having seen the improved results achieved by Gane, to have substituted a flexible/elastic doctor blade in the apparatus of Fukuta et al. with the expectation of achieving smoother flow of coating material under the blade and a resulting smooth, level coating.

With respect to the limitation requiring that coating material is delivered by the elastic body from the supplying and coating mechanism to the outer peripheral surface of the pillar structure, it is noted that the primary reference of Fukuta discloses similar placement of its coater and doctor blade with respect to the substrate as that disclosed in the instant application, for example see Figure 4 of the instant invention and Figures 5b and 5c of Fukuta. Thus the combination of Fukuta et al. in view of Gane would result in a similar apparatus to that described and illustrated in Applicant's own specification. Lastly, while Gane's apparatus does deliver coating material to the cylindrical substrate by means of pool/trough 10, it is noted that flexible blade 5 none-the-less contributes in delivering the coating material to the substrate surface as illustrated in Figure 1.

With respect to claim 21, the doctor blade of Fukuta et al. is disposed so that its longer direction coincides with the central axis direction of the pillar structure, therefore the modified elastic blade would be disposed in the same position. The elastic blade would contact the outer peripheral surface of the pillar structure, as similarly illustrated in Gane, between both end faces of the pillar structure.

As to claim 22, Fukuta et al. teaches that the holder holds the pillar structure placed thereon with one end thereof facing downward and has a pedestal rotating together with the held pillar structure on the axis of the substantially vertical direction as the common rotating axis (col. 8, lines 14-19).

As to claim 23, Fukuta et al. teaches that the holder has a cam which is disposed on the side of another end of the pillar structure placed and held on the pedestal and rotates on the axis of the vertical direction as the common rotating axis (col. 7, lines 24-36). As to claim 24, the

outer peripheral shape of the pedestal and that of the cam are nearly the same. As to claim 25, a centering means holds the pillar structure and the pedestal and/or the cam in a given positional relation.

As to claim 26, Fukuta et al. discloses a following mechanism which drives the smoother following the outer periphery of the pedestal and/or the cam so that the smoother is disposed at a given position with respect to the outer peripheral surface of the pillar structure (col. 7, lines 1-18).

As to claim 27, the following mechanism has first and second following rollers 36, 37 which are disposed at a given distance from each other and move backward and forward following the outer periphery of the cam while contacting with the outer periphery of the cam together with the supplying and coating mechanism and the smoother, and the first and second following rollers are disposed so that the angle formed by a straight line passing through the centers of the respective rollers and a tip portion of the smoother is a given angle (see Figure 4).

As to claim 28, Fukuta et al. lacks a teaching of using third and fourth following rollers where the rotating axis of the third following roller and that of the first following roller are common and the rotating axis of the fourth following roller and that of the second following roller are common. However, it is the Examiner's position that it would have been obvious for one having ordinary skill in the art to have added two more following rollers, in the same axis as following rollers 36, 37, to provide improved stability to the vertical pillar structure.

As to claims 29-32, it is the Examiner's position that the width, thickness, and hardness of a flexible/elastic blade in the modified process of Fukuta et al. would have been determined

through routine experimentation depending upon the specific coating materials used, the speed of rotation of the pillar structure, the coating thickness desired, etc., in the absence of a showing of criticality.

As to claim 33, Gane teaches that the elastic blade may comprise rubber (col. 3, lines 18-19).

As to claim 34, Fukuta et al. teaches that the outer periphery of the pedestal and/or the cam comprise stainless steel or ceramics (col. 5, lines 34-40).

As to claim 35, Fukuta et al. discloses that its original doctor blade should be made of stainless steel or ceramics to provide durability (col. 5, lines 29-31). For this reason, it would have been obvious for the retaining means of the flexible blade in the apparatus of Fukuta et al. in view of Gane to similarly be made of stainless steel or ceramics -- to provide durability.

As to claim 36, the shape of a section of the pillar structure cut along a plane perpendicular to the central axis of the pillar structure is circular or elliptical (see Figures).

As to claim 37, Fukuta et al. teaches that its pillar structure is a honeycomb structure comprising a plurality of cells which are flow paths for fluid.

As to claim 38, Fukuta et al. lacks a disclosure of supplying and coating mechanism and smoother which can rotate together along the outer periphery of the pillar structure. However it is the Examiner's position that it would have been obvious for an engineer having ordinary skill in the art to have reversed the means for relative movement (i.e., the pillar structure is stationary while the coating and smoothing mechanism rotate around the pillar structure) with the

expectation of equivalent and similar results since relative movement between the substrate and coating and smoothing mechanism is what is required.

As to claim 39, Fukuta et al. also discloses a method of using the apparatus discussed above with respect to claim 1 comprising: holding the pillar structure by the holder; supplying the coating material from the supplying and coating mechanism on the outer peripheral surface of the pillar structure and coating the coating material thereon while rotating the pillar structure and the holder on the axis of vertical direction as a common rotating axis; and smoothing the coating surface of the supplied and coated coating material between the outer peripheral surface and the sheet-like elastic body.

#### ***Conclusion***

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kirsten C. Jolley whose telephone number is 571-272-1421. The examiner can normally be reached on Monday to Tuesday and Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on 571-272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Kirsten C Jolley/  
Primary Examiner, Art Unit 1792

kcj